

The NEWS Energy and Water Cycle Climatology (NEWCC) project is aimed to synthesize a self-consistent climatology to describe the global energy *and* water cycles. using state-of-the-art satellite information developed by NEWS scientists as well as refinements from the community-at-large. The NEWCC project maintains a Google Group site and welcome all scientists to join in our efforts to refine our global water and energy cycle assessments:

**<http://groups.google.com/group/news-energy-and-water-cycle-climatology?hl=en>**

Our efforts have continued to update, compile, quality control, and augment multiple satellite data sets for our global water budget analyses. Table 1 (below) summarizes estimates of global river discharge that we have compiled in collaboration with Matt Rodell (a NEWS PI), who has been spearheading an effort to product a global water-cycle climatology based on the best available sources of NEWS data and supplementary data (when needed), and we have been working with the NEWS teams to refine these estimates. Our analyses thus far have indicated a discrepancy in the estimates over Australia (as well as South America). The Dai and Trenberth estimates (available at: <http://www.cgd.ucar.edu/cas/catalog/surface/dai-runoff/index.html>) are quite a bit smaller than what other estimates from GLDAS (Rodell) and MERRA indicate. However, other (model-based) estimates that consider water management (i.e. reservoir, irrigation, and inland-drainage loss, K. Strzepek, personal communication) indicate values are lower than the Dai and Trenberth estimate. Our continued efforts will rectify this (and other issues not explicitly mentioned). Estimates to this water budget assessment of the global atmospheric water vapor content based on our continued efforts with Eric Fetzer's group (also a NEWS PI) to analyze and quality-control the AIRS/AMSR-E retrievals. In this NEWS water budget compilation, we have also combined estimates of water vapor flux that combine satellite-based algorithms over the tropical oceans (T. Liu) with the modern-era reanalysis (MERRA, Bosilovich, NEWS PI). All these elements are currently being brought together, and will result in an updated version of the NEWCC water budget spreadsheet at:

**<http://spreadsheets.google.com/ccc?key=ppG09xFSdfUrcqybTYr1yZQ&hl=en>**

For the energy cycle assessment, Bing Lin has recently provided an updated energy cycle diagram, which updates the Trenberth reanalysis-based product with the MERRA estimates as well as satellite-based estimates. The NEWCC Google Group discussion link with further details of the methodology to this can be found at:

**[http://groups.google.com/group/news-energy-and-water-cycle-climatology/browse\\_thread/thread/f99c41cdc4c2987f?hl=en](http://groups.google.com/group/news-energy-and-water-cycle-climatology/browse_thread/thread/f99c41cdc4c2987f?hl=en)**

A downloadable Powerpoint version of the slide is also available on the NEWCC Google Group site.

The next critical phase of these efforts is to then undertake a critical, and quantifiable, assessment of the consistency between the energy and water budget syntheses, and then to blend the two disparate budgets into one unified global cycle. This will be, perhaps, the most uniquely distinguishable assessment of its kind provided by NEWS scientists.

Figure 1. July mean (2000-2005) vertically-integrated water vapor flux ( $\text{kg/m s}$ ) obtained via a combination of the MERRA project (Bosilovich, PI) and a satellite-based estimate over the tropical ocean regions (30S to 30N, T. Liu, NEWS PI).

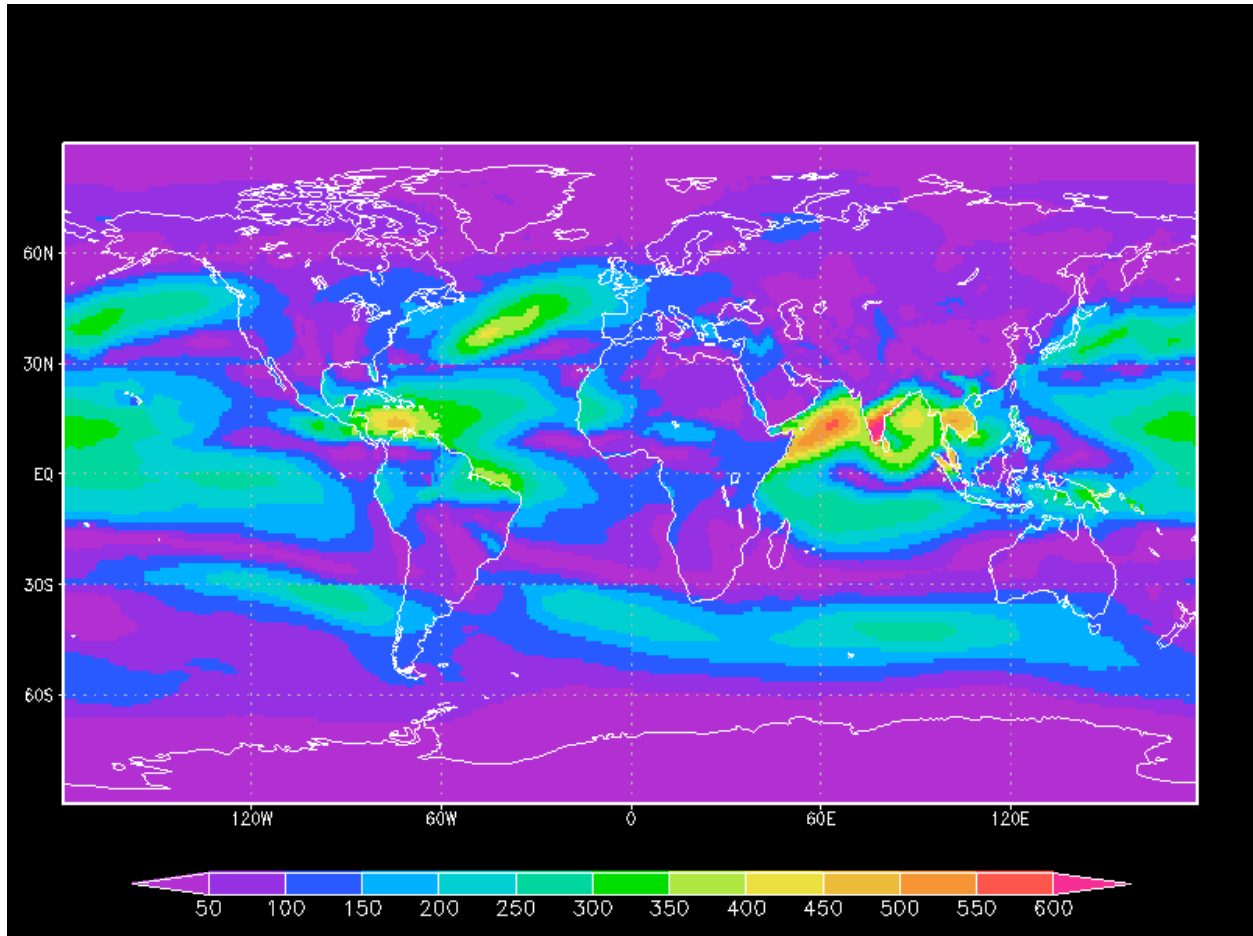


Table 1. Estimates of global river discharge for the NEWCC water budget assessment.

<b>Continent</b>	<b>Qs (m<sup>3</sup>/yr)</b>	<b>Area (m<sup>2</sup>)</b>	<b>Flux (kg m<sup>2</sup> yr<sup>-1</sup>)</b>
<b>Antarctic</b>	0.00E+00	1.23E+13	0.00E+00
<b>South America</b>	1.18E+13	1.77E+13	6.69E+02
<b>North America</b>	4.75E+12	2.41E+13	1.97E+02
<b>Africa</b>	3.50E+12	2.98E+13	1.18E+02
<b>Europe</b>	1.06E+13	5.32E+13	1.99E+02
<b>Australia/ Oceania</b>	8.89E+11	8.85E+12	1.00E+02